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REPORT PREPARATION - WATER POLLUTION SURVEYS

Ralph Porges

Robert A. Taft Sanitary Engineering Center
Cincinnati, Ohio

March 1960

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Bureau of State Services
Division of Water Supply and Pollution Control

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REPORT PREPARATION -
WATER POLLUTION SURVEYS

The report represents the end result of all the efforts put forth to accomplish the project. A poor report frequently negates the results of a meticulous field program while a good report does much to enhance the study. Report preparation should be as carefully planned as the field operations. In developing the report one should keep in mind the "who, what, why, when, where, and how" of the study.

The type of report will depend upon two basic considerations. These are: (1) the purpose of the report, and (2) for whose use is the report being prepared. The report may be only a record of the findings, such as population, population equivalents, and flow data. It may be an exposition of existing causes and effects and projections to other considerations that may reasonably occur, or predictions of conditions that might occur and recommendations for action to be taken. The report should be considered as a document permanently recording all facts essential to the study and for fulfillment of the needs of other technical agencies, of political representatives who may be for or against the conclusions and recommendations, and of the public and others concerned.

In general, most reports endeavor to substantiate some opinion, conclusion, or recommendation. In other words, the report must sell something. To do the best selling job possible it should be factual, sincere, and readable. Under this last item there must be considered the appearance of the document; it should be pleasing and attractive. The format should be practical to assure its proper filing and availability for reference. The presentation should be in logical sequence and the factual data adequately supported by background information, maps, diagrams, charts, tables, and references. The wordage should be easy to read and concise. Extensive supporting data should be relegated to the appendix.

In all instances the report adds to the existing record. Since field notes, observations, and laboratory data may be lost, all pertinent information should be included in the report for permanent recording. This information provides valuable baseline data for future studies of an area.

The first step in the development of the report is preparation of an outline. It should be thought out very carefully, revised as necessary, and finally polished. It is essential that all necessary items be covered and that the report maintains logical continuity. A good outline will prevent omission of necessary material and save considerable time in report writing. Outlines vary with the needs of the reports; however, most reports will contain the following major items:

1. Title: The title should be descriptive of the report; preferably not more than six to eight words. The title page should always carry the date of the report.
2. Authors: Authorship recognition will designate the responsible individuals and affiliated agency. This is essential to give the reader some concept of the authenticity of the report depending upon the reputation of the individuals and agency doing the work.
3. Table of Contents: The table of contents will be as brief as possible but complete enough to assist in locating quickly pertinent features of the report. Separate listings may be made of tabulations, charts, and figures.
4. Preface: There should be an introductory statement that briefly presents the events leading to the study in order to orient the reader to the report. The over-all objectives may be briefed.
5. Acknowledgment: The acknowledgment should consider participating and cooperating individuals and agencies such as health departments, water resource agencies, and others. All individuals should be listed by title and agency affiliation.

6. Summary: The summary should consist of a condensed abstract of the entire report, possibly supplemented by conclusions and recommendations. It is suggested that these be placed in the front of the report, as many of the readers may wish only to read these sections and are not concerned with the intrinsic details of the survey. These sections are among the most important of the report, and considerable time should be devoted to their preparation. The summary should not exceed five per cent of the report.

7. Conclusions: As indicated previously, conclusions may be made a part of the summary or follow the summary in sequence. This section is one that will receive major and possibly most critical attention. It should be prepared with the following three "c's" in mind: clear, concise, confident. Do not hesitate to indicate where the data may be weak and inconclusive, or where additional study may be necessary.

8. Recommendations: Again, recommendations may be a part of the summary or may follow the conclusions at the beginning of the report. This section is the crux of the entire study. It should present a resolution of

the problem, the action to be taken, and indicate further study if necessary. It should be stated briefly, but positively.

9. The main body of the report will be discussed in its various subsections:

   a. Introduction: The introduction should clearly define the problem and state in detail the purpose of the study. The reader should be properly oriented. A base map, uncluttered with non-essential details, should emphasize the features to be considered such as water uses, sources of pollution, sampling locations, etc., and should be an integral part of the introduction.

   b. Objectives: The previous section delineated the problem; this section presents the questions to be answered. This can be relatively brief.

   c. Methods of Study: This section should describe the approach to the problem. It should indicate the time and duration of the investigation. It should present the sampling program including adequate description of sampling stations for future reference. Since river mileages may change, a geographic location of sampling stations is also highly desirable. Laboratory procedures

should be indicated with reference to standard methods and to non-standard methods where used. Detailed descriptionsof non-standard methods and other procedures should be placed in the appendix. The means whereby the hydrological, economic, and other data were obtained should be indicated.

d. Results (Presentation of Data): This section will include a presentation of all the facts including data such as sewered populations, sources of pollution, water uses, stream data, and analytical results. Charts, tables, and illustrations should be used to condense the material to presentable form. This section should be concise; lengthy tabulations of gaging and sampling results should be placed in the appendix.

e. Discussion: The discussion should be used for evaluation of the data obtained. There is room in this section for aggressive and imaginative thinking. The analysis and interpretation of results, including methods of attack and validity of data should be discussed. Detailed description of any statistical methods used should be placed in the appendix. Wherever possible references

should be made to substantiating reports or those indicating contradicting results. An effort should be made to explain discrepancies. The results of the study should be projected or extrapolated from conditions observed to those anticipated under adverse circumstances of flow, waste loads, temperature, etc., to provide many of the answers to the problems. If required, cost data should be developed.

10. Bibliography: The bibliography is useful to the technical reader and serves for future reference. It also lends substantiating weight to the report. This part is frequently omitted because it is considered bothersome to prepare. However, it is highly recommended that all technical reports be referenced to other studies pertinent to the subject.

11. Appendix: The appendix will contain detailed material which, if included in the main body of the report, would disrupt continuity and distract from the main purpose of the report. It is the main repository of the basic records of the study as analytical results and detailed methods of procedure. It may contain several sections, each devoted to an individual portion of the records.

In closing, it cannot be emphasized too strongly that report preparation is probably one of the most important aspects of a field study, and that due thought and consideration should be given this matter. The detailed outline of a report should be prepared in the initial phase of survey planning to crystallize in the project director's mind the various points that must be met by the study. Attached is a sample copy of an outline that has been used in the development of a stream investigations report.

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